富山市科学博物館
TOYAMA SCIENCE MUSEUM

Some terrestrial isopod crustaceans from Toyama City, middle Japan

journal or publication title	Bulletin of the Toyama Science Museum
number	2
page range	13-21
year	1980-03-20
URL	http://repo.tsm.toyama.toyama.jp/?action=repository_uri&item_id=13

Bulletin of the Toyama Science Museum No.2 pp. 13－21 ; (1980)

Some Terrestrial Isopod Crustaceans from Toyama City, Middle Japan*

Noboru Nunomura
Toyama Science Museum

富山市産陸生等脚目甲殻類

布村　昇
富山市科学文化センター

1973年から1979年にかけて，筆者が富山市内で採集した陸生等脚目甲殻類について報告する。今回報告するのは下記の9種で，うち1種は新種である。

Family Tylidae ハマダンゴムシ科
- *Tylos* sp. ハマダンゴムシ

Family Ligiidae フナムシ科
- *Ligia exotica* Roux フナムシ
- *Ligidium japonicum* Verhoeff ヒメフナムシ

Family Oniscidae ハマワラジムシ科
- *Exalloniscus cortii* Arcangelli オカメワラジムシ(新称)

Family Porcellionidae ワラジムシ科
- *Porcellio scaber* Latreille ワラジムシ
- *Porcellio toyamaensis* n. sp. サビワラジムシ(新称)
- *Porcellio maculatus* Iwamoto フイリワラジムシ
- *Metoponorthus pruinosus* (Brandt) ホソワラジムシ

Family Armadillidiidae オカダンゴムシ科
- *Armadillidium vulgare* (Latreille) オカダンゴムシ

The taxonomy and faunal survey of terrestrial isopod crustaceans have been much ignored in Japan. For several years, I have been trying to collect the animals at Toyama City. Although the collection is yet small, I have so far found nine species including one which is new to science. The specimens were preserved in alcohol, dissected and examined in glycerol. All the figures were drawn by using camera lucida.

Before going further, I wish to express my sincere gratitude to Dr. Saburo Nishimura of the Kyoto University for reading the manuscript.

---

* Contributions from the Toyama Science Museum No.7

Family Tylidae

Tylos sp.

(Japanese name : Hama-dangomushi)

The specimens were collected from the upper zone of sandy beach at Hamakurosaki. It lives in somewhat wet and coarse sand, especially under the well drained wrack. The precise specific identification of the present commonest maritime isopod of Japan, hitherto often treated as *Tylos granulatus* Miers, is postponed to a future study.

Material examined : 2♀♀, near the Toyama Youth Hostel at Hamakurosaki, coll. N. Nunomura, Oct. 20, 1978.

Family Ligiidae

Ligia exotica Roux, 1828

(Japanese name : Funamushi)

This species lives on the quay walls and tetrapods protecting coastal constructions in the harbors, especially of Iwase and Mizuhashi.

Ligidium japonicum Verhoeff, 1918

(Japanese name : Hime-funamushi)

The species is restricted to pretty wet habitats such as those found adjacent to rivers.

Material examined : 1♂ 2♀♀, near the Hioki-bashi Bridge, across the River Joganji, coll. N. Nunomura, Jan. 1, 1976.

Family Oniscidae

Exalloniscus cortii Arcangelli, 1927

(Japanese name : Okame-warajimushi, new name)

(Figure 1)

Material examined : 2♂♂ (4.6~4.8mm in body length), Hikatae, coastal area of Toyama City, facing Toyama Bay, coll. N. Nunomura, May 23, 1979.

Habitat : Specimens were collected in a leaf litter zone of pine forest at Hikatae.

Description : Body somewhat oblong oval, about three times as long as broad. Body surface rather smooth ; pale brown in color.

First antenna rather long and three-segmented ; terminal segment with about six aesthetascs at outermost tip. Second antenna about two-sevenths as long as the body ; first peduncular segment small ; second segment oblong ; third segment small and triangular ; fourth and fifth segments oblong and longest ; flagellum slightly longer than the fifth peduncular segment ; each flagellar segment similar in length ; terminal segment with a long and several small spines.

Cephalon peculiar in shape ; medial process wide but low ; lateral lobe short but sharply pointed. Eyes small, ocelli not discernd. Epimera of peraeonal somites IV-VII well

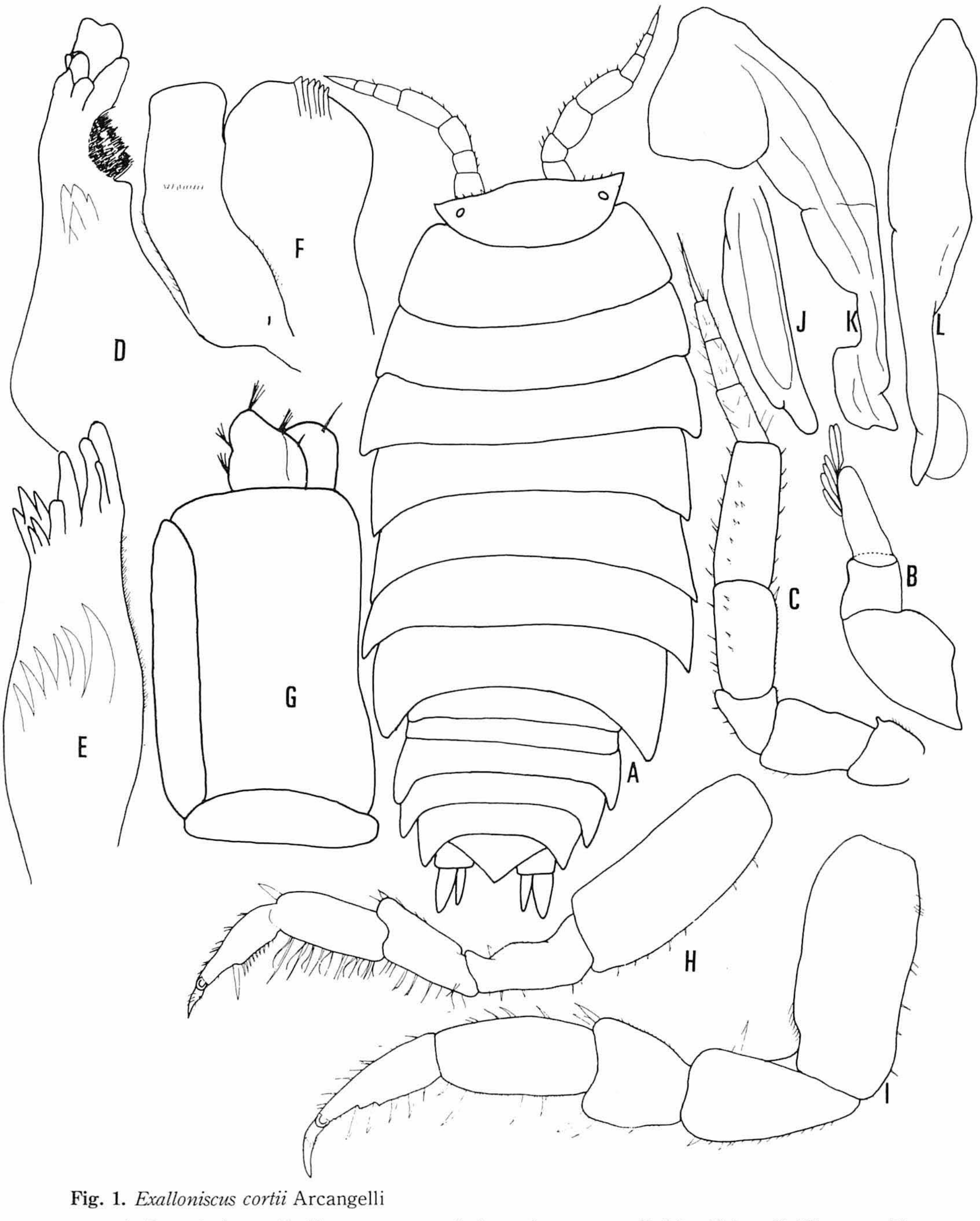

Fig. 1. *Exalloniscus cortii* Arcangelli

A. Dorsal view. B. First antenna. C. Second antenna. D. Mandible. E. First maxilla. F. Second maxilla. G. Maxilliped. H. First peraeopod. I. Seventh peraeopod. J. Penes. K. Endopod of male first pleopod. L. Endopod of male second pleopod. (All the specimens are male from Hikatae).

developed. Mandible rather slender with three strong teeth. First maxilla with ten curved teeth at the tip of outer lobe. Second maxilla stout; medial lobe carries a series of about six to seven small parallel ribs. Maxilliped stout and rectangular.

Penes club-like in shape. Endopod of male first pleopod long with a reniform structure near the tip. Uropod short. Telson triangular.

Remarks : The present specimens agree well with the original description (Arcangelli, 1927), which is based on the specimens from the Pacific side of Japan, Corea and China

Family Porcellionidae

Porcellio scaber **Latreille, 1804**

(Japanese name : Warajimushi)

This species is very common in the pine forests at Hamakurosaki, Iwase and Hikatae.

Material examined : 1♂, Imagawabashi at Hamakurosaki, coll. N. Nunomura, June, 29, 1978; 2♂♂ 2♀♀, bank at the estuary of the River Joganji, coll. N, Nunomura, Oct.20, 1978; 26♂♂ 14♀♀, Hamakurosaki, coll. N. Nunomura, Oct. 20, 1978; 3♂♂ 2♀♀, Joshi Park, coll. N. Nunomura, Nov. 27, 1979 ; 4♂♂ 4♀♀, Yokogoshi, coll. N. Nunomura, Feb.7,1979.

Porcellio toyamaensis, **n. sp.**

(Japanese name : Sabi-warajimushi, new name)

(Figures 2 and 3)

Material examined : 2♂♂ (1♂ holotype, 6.3mm in body length and 1♂ paratype, 7.5mm in body length), and 5♀♀ (1♀ allotype, 7.8mm in body length, and 4♀♀ paratypes, 4.8~8.4mm in body length), Hamakurosaki, coll. N. Nunomura, Feb. 7, 1979. Type series is deposited at the Toyama Science Museum: holotype male (Cr-107), allotype female (Cr-108), paratypes (Cr-109~113).

Habitat : Under the leaf litter and on underside of relatively big stones in the pine forest.

Description : Body somewhat oblong and oval, about 2.5 times as long as wide. Hindo-lateral angles of peraeonal somites IV-VI acute and protruded. Body color slightly reddish brown, with many paler spots. Granules of dorsal surface sparsely scattered on each peraeonal somite.

First antenna small and three-segmented, terminal segment bearing about nine aesthetascs at the tip. Second antenna pretty long; first to third peduncular segments almost rectangular; fourth segment somewhat elongated; fifth segment about three time as long as the third. Biarticulate flagellum almost as long as the fifth peduncular segment; terminal segment about two-fiifths of the first segment and with a relatively long seta at the tip.

Cephalon mediocre in size ; frontal lobe triangulate ; lateral lobes rather prominent and rectangular. Eyes mediocre with 20-26 ocelli.

Mandible rather stout; pars incisiva rather big; two peniciles on both sides. Outer lobes of first maxilla rather stout with eight teeth whose tip is round; inner lobes with two

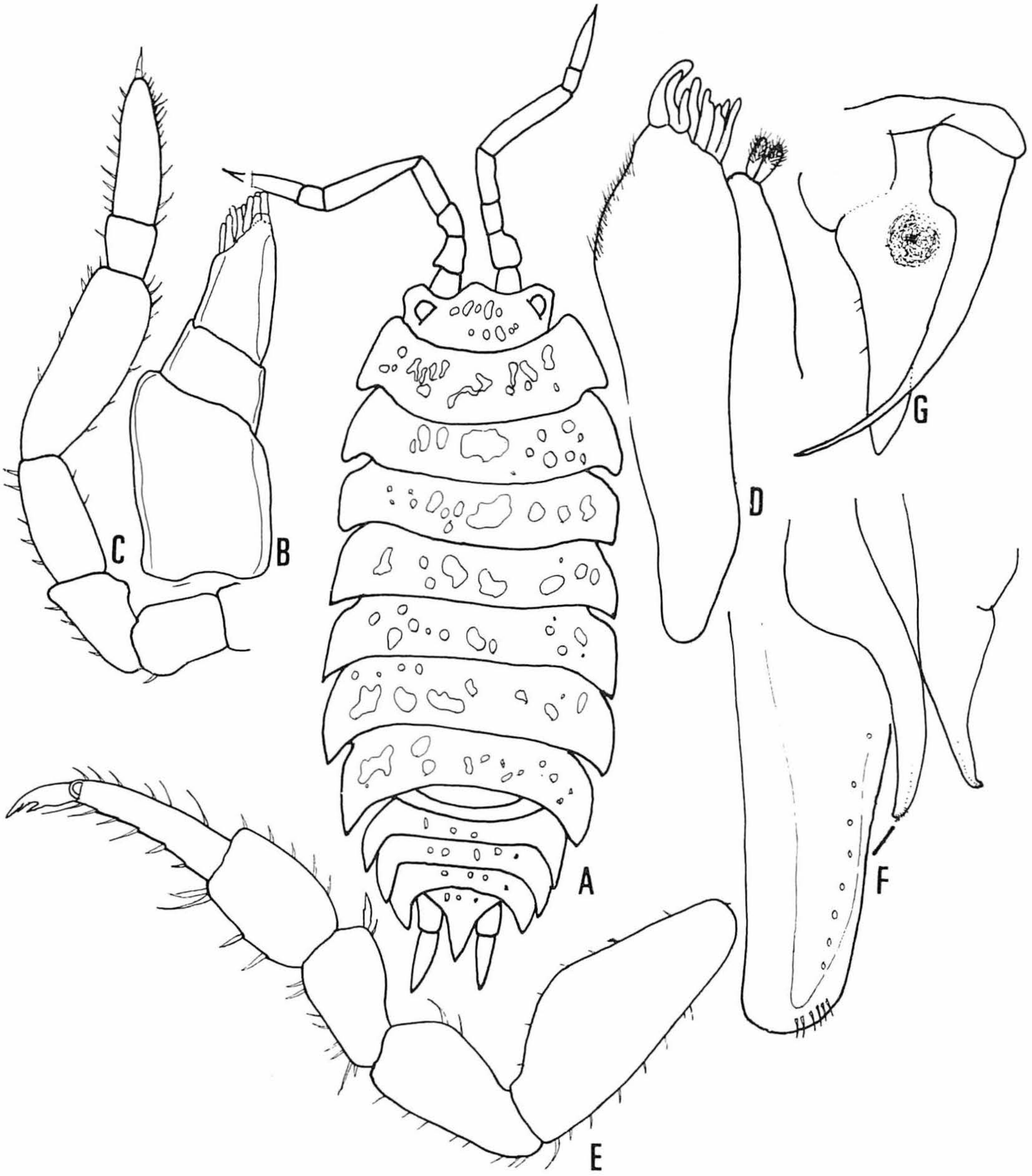

Fig. 2. *Porcellio toyamaensis,* n. sp.

A. Dorsal view. B. First antenna. C. Second antenna. D. First maxilla.
E. Seventh peraeopod. F.Male first pleopod. G.Male second pleopod (A and E : holoype male, B and C : allotype female, D,F-G : paratype male).

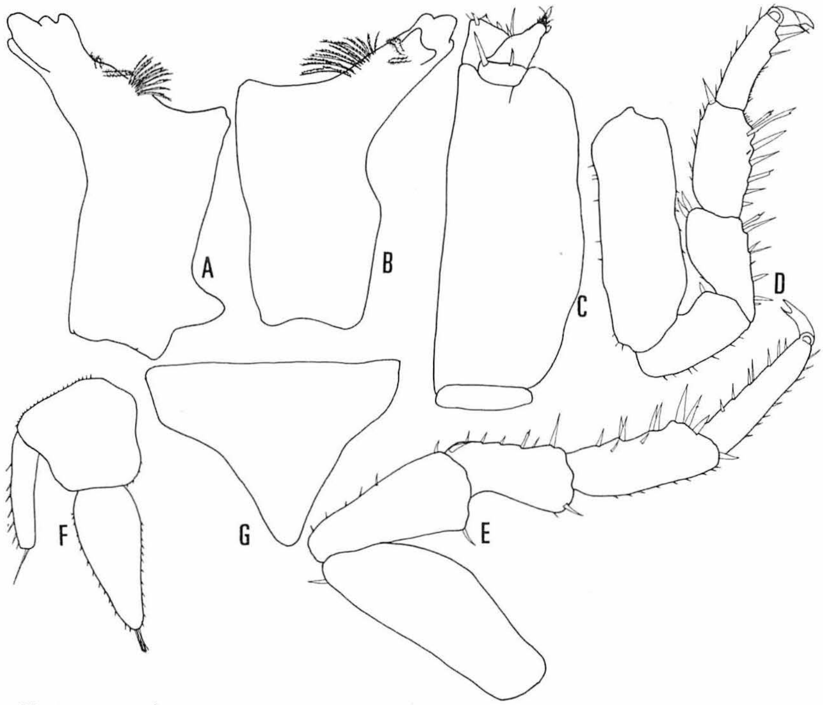

Fig. 3. *Porcellio toyamaensis*, n. sp.
A. Left mandible. B. Right mandible. C. Maxilliped. D. First peraeopod. E. Seventh peraeopod. F. Uropod. G. Telson. (A and B : allotype female, C : holotype male, D-F : paratype female, G: allotype female).

peniciles. Second maxilla rectangular; medial lobe carries a series of about 23 small parallel ribs. Maxilliped rectangular.

All the peraeopods are almost similar in shape in both sexes but the size gradually increases posteriorly; basis oblong; ischium oblong with a relatively big seta at outer corner; merus rectangular with about seven to ten setae on inner margin and a seta at outer corner; carpus oblong with four to ten setae on inner margin, and a seta and about ten small spines on outer margin; propodus long with two to seven setae on inner margin and six to eight spines on inner margin; dactylus with a bifid claw.

Penes slender. Endopod of male first pleopod club-shaped and with about six small spines near the tip. Endopod of male second pleopod longer than the exopod and recurved outerwards. Uropods rather stout; propodite stout; endopodite oblong with several small spines on inner margin and a few longer setae at the tip; exopodite laceolate-oblong with about five setae at the tip. Telson hastate in shape and about 1.5 times as long as broad.

Remarks : The present species is most closely allied to *Porcellio submaritimus* Iwamoto from Yokohama (Iwamoto, 1943), but differs from the latter in the following points : (1) smaller median process of cephalon, (2) shorter carpus of male seventh peraeopod, and (3) longer endopod of second pleopod in male.

The present new species is found together with *Porcellio scaber* Latreille at Hamakurosaki. The former is readily distinguished, however, from the latter in the following points: (1) reddish body color, (2) shorter first flagellar segment, (3) shape of cephaon, and (4) shape of anterior corner of peraeonal somite.

Porcellio maculatus **Iwamoto 1943**

(Japanese name : Fuiri-warajimushi)

(Figure 4)

Material examined : 2♂♂ 1♀, Hioki-bashi, across the River Joganji, coll. N. Nunomura, Jan. 1, 1976 ; 1♂, Horikawakoizumi, coll. N. Nunomura, Aug. 22, 1976 ; 2♂♂ 1♀, Kinsenji near Sinjo, coll. N. Nunomura, May 3, 1976 ; 2♂♂ 4♀♀, Joshi Park, coll. N. Nunomura, Nov. 27, 1978.

Habitat : Specimens were collected from grassy spots in such places as bank, park, and garden of residental areas.

Description : Body convex, about 2.3 time as long as wide; body surface rather smooth; body color brown with many paler spots. Small granules are scattered sparsely on dorsal side of peraeonal somites.

First antenna small; first segment rectangular; second segment short; less than half of the width; terminal segment conical bearing five setae at the tip. Second antenna composed of five peduncular segments and two flagellar segments; basal three peduncular segments short; fourth segments is twice as long as the third; fifth is three time as long as the third; terminal flagellar segment is 1.8 times as long as the basel flagellar segment. Cephalon with low triangulate median process and rectangular lateral lobes. Eyes with about 22 ocelli.

Labrum pentagonal in shape. Right mandible with four-headed tooth; lacina mobilis chitinized. Left mandible with a two-headed tooth; lacina mobilis chitinized.
First maxilla with two lobes; outer lobe with about eight curved teeth. Second maxilla divided into two slender lappets; the medial lobe carries a series of about several small parallel ribs. Maxilliped rather prominent; endite broad with some short setae.

All the peraeopods are almost similar in shape.

Penes slender, linear-lanceolate. First pleopod in male is modified; extents straightly; apex curved and with a series of eight small spines, Second pleopod in male is also modified; stylus long and curved; exopod elongated and triangular.

Metoponorthus pruinosus **Brandt, 1933**

(Japanese name : Hoso-warajimushi)

The present cosmopolitan species is rather rare in Toyama City.

Material examined ; 1♀, Kurehayama Hill, coll. K. Kazui, May 10, 1979.

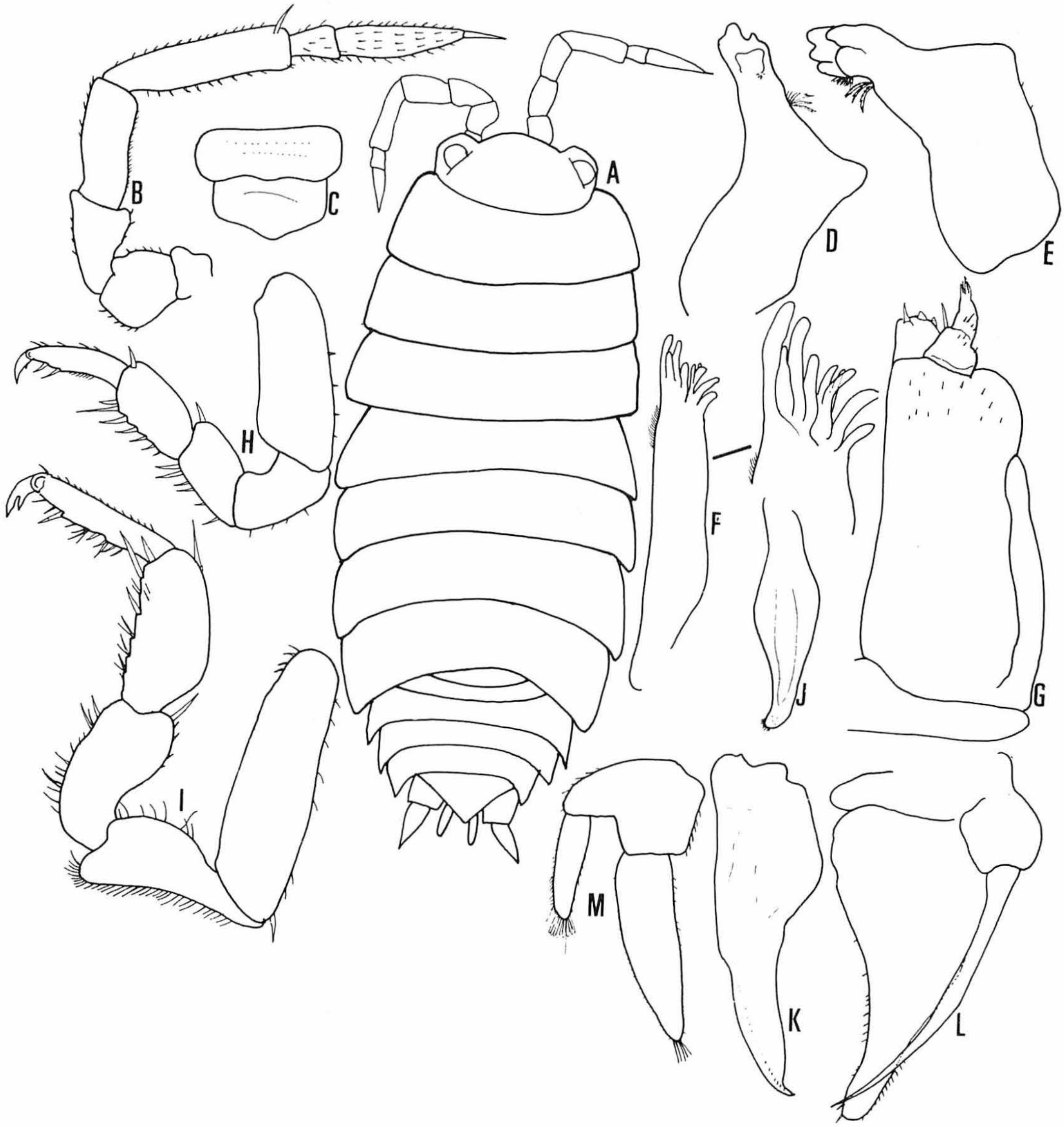

Fig. 4. *Porcellio maculatus* Iwamoto

A. Dorsal view. B. Second antenna. C. Labrum. D. Left mandible. E. Right mandible. F. First maxilla. G. Maxilliped. H. First peraeopod. I. Seventh peraeopod. J. Penes. K. Endopod of male first pleopod. L. Male second pleopod. M. Uropod.
(A, C, E, J-M : male, B, D, F-I : female).

Family Armadillidiidae

***Armadillidium vulgare* (Latreille), 1940**

(Japanese name : Oka-dangomushi)

The species is probably the most abundant and widely distributed among land isopods in the urban area of Toyama City. It is especially abundant in the park, gardens, and farms, and even on the area covered with concrete or other artificial materials. On the other hand, it is hardly found in the forests.

Material examined : 2♂♂ 2♀♀, Horikawakoizumi, coll. N. Nunomura, July 16, 1973 ; 1♂ Hagiwarabashi, coll. T. Nunomura, Jan. 4, 1975 ; 1♂, peak of Joyama Hill, coll. N. Nunomura, Mar. 6, 1975 ; 1♂ Kinsenji near Sinjo, coll. N. Nunomura, May 3, 1976 ; 3♂♂ 3♀♀ Imagawabashi near Hamakurosaki, coll. N. Nunomura, June 29, 1978 ; 5♂♂ 6♀♀, Hikatae, coll. N. Nunomura, May 23, 1979 ; 1♂, Joshi Park, coll. N. Nunomura, July 2, 1979.

References

Arcangelli, A, 1927. Isopodi terrestri raccolti nell' Estremo Oriente dal Prof. Filippo Silvestri. Boll. Labr. Zool. Gen. Agr. R. Scoul. Sup. Agroicolt. Portici 20 : 169-211.

Flasrova, M., 1972. Über einige Isopoden aus Korea (Isopoda, Oniscoidea). Ann. Zool. Walzawa, 29(4) : 91-113.

Iwamoto, K., 1943. On Japanese terrestrial isopod Crustaceans. Shokubutsu oyobi Dobutsu. 11(12) : 959-974. (in Japanese).

Schmölzer, K., 1965. Ordnung Isopoda (Landasseln). 1-468.

Vandel, A., 1960. Isopodes terrestres 1re Partie. Fauna de France, 64 : 1-410.

———, 1962. Isopodes terrestres 2^{e} Partie. Ibid. 66 : 411-931.